

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

ALIGN TECHNOLOGY, INC.,

Plaintiff,

v.

CLEARCORRECT OPERATING, LLC,
CLEARCORRECT HOLDINGS, INC.,
& INSTITUT STRAUMANN AG,

Defendants.

CLEARCORRECT OPERATING, LLC,
CLEARCORRECT HOLDINGS, INC.,
& STRAUMANN USA, LLC,

Counterclaim-Plaintiffs,

v.

ALIGN TECHNOLOGY, INC.,

Counterclaim-Defendant.

Civil Action No. 6:24-cv-00187-ADA-DTG

JURY TRIAL DEMANDED

**DEFENDANTS' AND COUNTERCLAIM-PLAINTIFFS' OPENING CLAIM
CONSTRUCTION BRIEF**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	THE TREATMENT PLANNING PATENTS (THE '444, '217, '879, AND '456 PATENTS).....	3
A.	“through at least one of staggering and roundtripping of at least one dental object”	5
B.	“an optimal number of stages for the order of movement of the dental objects”	8
C.	The Pattern Terms.....	13
D.	The Means-Plus-Function Terms.....	18
1.	Align Improperly Tries to Expand the Means-Plus-Function Terms	19
2.	The Specification Fails to Disclose Adequate Structure for the Means-Plus-Function Terms.....	21
III.	THE COMPOSITE IMAGE PATENT (THE '936 PATENT)	37
A.	“replace [replacing] at least a portion of the [removed] surface portion of the model [...] using the received second scan data [at least a portion of the second scan data]”.....	39
B.	“second scan data of the patient’s teeth”	41
IV.	CONCLUSION.....	43

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc.</i> , 265 F.3d 1294 (Fed. Cir. 2001).....	10
<i>In re Aoyama</i> , 656 F.3d 1293 (Fed. Cir. 2011).....	36
<i>Aristocrat Technologies Australia Pty Ltd. v. International Game Technology</i> , 521 F.3d 1328 (Fed. Cir. 2008)..... <i>passim</i>	
<i>Aylus Networks, Inc. v. Apple Inc.</i> , 856 F.3d 1353 (Fed. Cir. 2017).....	7, 42, 43
<i>B. Braun Med., Inc. v. Abbott Labs.</i> , 124 F.3d 1419 (Fed. Cir. 1997).....	30
<i>Baran v. Medical Device Techs., Inc.</i> , 616 F.3d 1309 (Fed. Cir. 2010).....	19
<i>Biomedino, LLC v. Waters Techs. Corp.</i> , 490 F.3d 946 (Fed. Cir. 2007).....	19
<i>Blackboard, Inc. v. Desire2Learn Inc.</i> , 574 F.3d 1371 (Fed. Cir. 2009).....	28, 34, 36
<i>C.R. Bard, Inc. v. M3 Sys., Inc.</i> , 157 F.3d 1340 (Fed. Cir. 1998).....	21
<i>Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.</i> , 296 F.3d 1106 (Fed. Cir. 2002).....	19
<i>Comaper Corp. v. Antec, Inc.</i> , 596 F.3d 1343 (Fed. Cir. 2010).....	12
<i>CUPP Computing AS v. Trend Micro Inc.</i> , 53 F.4th 1376 (Fed. Cir. 2022)	7
<i>Curtiss-Wright Flow Control Corp. v. Velan, Inc.</i> , 438 F.3d 1374 (Fed. Cir. 2006).....	12
<i>Datamize, LLC v. Plumtree Software, Inc.</i> , 417 F.3d 1342 (Fed. Cir. 2005).....	8

<i>David Netzer Consulting Eng'r LLC v. Shell Oil Co.,</i> 824 F.3d 989 (Fed. Cir. 2016).....	43
<i>Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.,</i> 412 F.3d 1291 (Fed. Cir. 2005).....	28
<i>Digital Retail Apps, Inc. v. H-E-B, LP,</i> 2020 WL 376664 (W.D. Tex. Jan. 23, 2020)	19
<i>Eastman Kodak Co. v. Goodyear Tire & Rubber Co.,</i> 114 F.3d 1547 (Fed. Cir. 1997).....	40
<i>Ergo Licensing, LLC v. CareFusion 303, Inc.,</i> 673 F.3d 1361 (Fed. Cir. 2012).....	25
<i>Fiber, LLC v. Ciena Corp.,</i> 792 F. App'x 789 (Fed. Cir. 2019)	28
<i>Finisar Corp. v. DirecTV Grp., Inc.,</i> 523 F.3d 1323 (Fed. Cir. 2008).....	40
<i>Fintiv, Inc. v. PayPal Holdings, Inc.,</i> 2023 WL 5423082 (W.D. Tex. July 21, 2023)	30
<i>Function Media, LLC v. Google Inc.,</i> 708 F.3d 1310 (Fed. Cir. 2013)..... <i>passim</i>	
<i>Grecia Estate Holdings LLC v. META Platforms, Inc.,</i> 605 F. Supp. 3d 905 (W.D. Tex. 2022).....	43
<i>Honeywell Int'l, Inc. v. Universal Avionics Sys. Corp.,</i> 493 F.3d 1358 (Fed. Cir. 2007).....	17
<i>Ibormeith IP, LLC v. Mercedes-Benz USA, LLC,</i> 732 F.3d 1376 (Fed. Cir. 2013).....	25, 28, 32
<i>Immersion Corp. v. Samsung Elecs. Am., Inc.,</i> 2018 WL 5005791 (E.D. Tex. Oct. 16, 2018)	40
<i>Interval Licensing LLC v. AOL, Inc.,</i> 766 F.3d 1364 (Fed. Cir. 2014).....	9, 10
<i>Kyocera Senco Indus. Tools Inc. v. International Trade Comm'n,</i> 22 F.4th 1369 (Fed. Cir. 2022)	17
<i>Microsoft Corp. v. Multi-Tech Sys., Inc.,</i> 357 F.3d 1340 (Fed. Cir. 2004).....	7, 8

<i>Northrop Grumman Corp. v. Intel Corp.</i> , 325 F.3d 1346 (Fed. Cir. 2003).....	19
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	9
<i>Ramot at Tel Aviv Univ. Ltd. v. Cisco Sys., Inc.</i> , 2020 WL 2517581 (E.D. Tex. May 15, 2020).....	42
<i>Realtime Adaptive Streaming L.L.C. v. Sling TV, L.L.C.</i> , 113 F.4th 1348 (Fed. Cir. 2024)	8
<i>Sinorgchem Co., Shandong v. Int'l Trade Comm'n</i> , 511 F.3d 1132 (Fed. Cir. 2007).....	18
<i>SuperGuide Corp. v. DirecTV Enterprises, Inc.</i> , 358 F.3d 870 (Fed. Cir. 2004).....	6
<i>TQP Development, LLC v. Intuit Inc.</i> , 2014 WL 2810016 (E.D. Tex. June 20, 2014).....	40
<i>WMS Gaming, Inc. v. Int'l Game Tech.</i> , 184 F.3d 1339 (Fed. Cir. 1999).....	21
Statutes	
35 U.S.C. § 112.....	20

I. INTRODUCTION¹

Defendants ClearCorrect Holdings, Inc., ClearCorrect Operating, LLC, and Institut Straumann AG and Counterclaim-Plaintiff Straumann USA, LLC (collectively, “ClearCorrect”) ask the Court to construe Align’s patent claims in accordance with how *Align itself* has defined its purported inventions in the claims, specifications, and prosecution histories of its asserted patents. Align, by contrast, seeks to run from its prior statements in an attempt to broaden its claims beyond anything Align has purported to invent.

For example, two of Align’s Treatment Planning patents (the ’444 and ’456 patents) include claim terms relating to the use of certain “movement patterns” for teeth in an orthodontic treatment plan (e.g., a mid-line shift pattern, an A-shaped pattern, etc.). These are terms that Align created; they have no well-known meaning in orthodontics or outside of the realm of Align and its patents. Align, however, says no construction is necessary for these terms, not wanting to be bound by how it defined these terms in its patents. ClearCorrect, by contrast, asks the Court to assist the jury by construing these specialized, unusual terms consistent with Align’s lexicography.

¹ On October 29, 2024, Judge Gilliland rejected ClearCorrect’s request for leave to brief additional terms. Dkt. 120. As explained in the dispute chart, ClearCorrect sought to construe a total of 8 disputed terms plus the 22 means-plus-function terms (which ClearCorrect contends are indefinite)—for a total of 30 claim terms from the 179 claims that Align currently asserts. *Id.* at 3-5. Judge Gilliland instead ordered that the parties brief no more than 18 terms and noted that ClearCorrect’s opening claim construction brief must include any arguments that any claim terms are indefinite. *Id.* at 2. This brief complies with Judge Gilliland’s 18-term limit. And because ClearCorrect contends that there are 23 indefinite terms—more than the 18 terms allowed—and in order to preserve ClearCorrect’s indefiniteness positions, ClearCorrect respectfully submits Appendix A to this brief, which includes the additional means-plus-function terms that ClearCorrect had proposed for construction as being indefinite. Per Judge Gilliland’s order, no separate briefing has been provided for those terms, but as noted in the Appendix, each of the additional terms is indefinite for substantially the same or similar reasons as one or more of the terms addressed in this brief and ClearCorrect is prepared to provide supplemental briefing on those terms at this time.

As another example, with respect to Align’s Composite Image patent (the ’936 patent), Align seeks to run from how it characterized its purported invention in prior IPR proceedings and from statements Align made to get its claims granted during prosecution. As Align explained in the IPR proceedings, the Composite Image patent relates to updating an initial scan of a patient’s teeth with new scan data obtained “*after the patient’s intraoral cavity itself has physically changed.*”² Ex. O [IPR2021-01241, Paper 10 (Patent Owner Preliminary Response)], at 6. Indeed, Align acknowledged that this “physically changed” feature was the basis on which the examiner allowed the patent claims. *Id.* Now, however, Align refuses to abide by its prior statements and seeks to have the Composite Image patent cover the use of new scan data regardless of whether it reflects a physically changed portion of a patient’s teeth.

Align also seeks to expand the scope of its patents by trying to avoid the *quid pro quo* required for means-plus-function claiming under 35 U.S.C. § 112, ¶ 6. Align asserts 14 claims that recite nearly two dozen means-plus-function terms. But Align’s specification does not disclose sufficient corresponding structure for these claims—i.e., the specification does not disclose the software algorithms required for means-plus-function terms that are implemented by computers. Federal Circuit precedent holds that such terms are indefinite because they are not properly tied to a specific structure and thus impermissibly seek to cover all ways of performing the claimed function.

The Court should hold Align to its own words in the claims, in the specifications, and in the prosecution histories of its patents and not allow Align to circumvent the definiteness requirements of 35 U.S.C. § 112. The Court should adopt ClearCorrect’s proposed claim constructions.

² Emphases are added, unless otherwise noted.

II. THE TREATMENT PLANNING PATENTS (THE '444, '217, '879, AND '456 PATENTS)

Align has asserted all 105 claims from U.S. Patent Nos. 8,038,444 (Dkt. 1-5), 10,456,217 (Dkt. 1-6), 10,524,879 (Dkt. 1-7), and 11,369,456 (Dkt. 1-8). These four patents, which all share a common specification,³ have been referred to as the “Treatment Planning Patents” and claim priority to two provisional applications filed on August 30, 2006. The Treatment Planning Patents generally relate to “utilizing … computing devices to stage the movement of teeth during an alignment treatment,” '444 patent, Abstract, and in particular, to using the computing devices to avoid collisions of teeth as they move. *Id.*, 3:54-57 (“The program also accounts for any collisions that might occur between teeth as the teeth move from one treatment stage to the next.”).

The patents do not purport to be the first to use computers to automate orthodontic treatment planning and avoid tooth collisions. For example, the patents refer to prior unrelated Align patent applications that previously “describe[d] computer-implemented techniques for using the digital models in designing and simulating an orthodontic treatment plan for the patient.” *Id.*, 3:17-19. One of those applications—U.S. patent application Ser. No. 09/169,276—was filed in 1998 and is described in the Treatment Planning Patents as disclosing the use of “data sets representing the tooth positions at various treatment stages” in order to “produce orthodontic appliances that implement the treatment plan.” *Id.*, 3:25-27. That 1998 application specifically describes using a computer program to detect and eliminate teeth collisions in a treatment plan and thereby “establish[] collision-free paths for each tooth to be moved.” Ex. A [U.S. Patent Application No. 09/169,276] at 33:4-6.

³ Each of the Treatment Planning Patents share a common specification. For purposes of this brief, ClearCorrect only cites to the '444 patent (Dkt. 1-4).

What the Treatment Planning Patents claim as their alleged invention is the use of a computer to perform various techniques—traditionally performed manually by human technicians—to avoid collisions when creating a treatment plan. *See* Dkt. 31 at 16. For example, the patents describe using a computer to create a treatment plan using well-known techniques such as “staggering”—which the patent defines as “delaying one or more teeth from moving one or more stages where it would otherwise move in order to prevent another tooth from colliding with and/or obstructing the path of the delayed tooth.” ’444 patent, 12:44-48. The patent also describes the use of another well-known technique known as “round-tripping”—which the patent defines as “moving a first tooth out of the path of a second tooth, and once the second tooth has moved sufficiently, moving the first tooth back to its previous position before proceeding to a desired final position of that first tooth.” *Id.*, 12:51-55.

The Treatment Planning Patents also disclose using various “patterns” of teeth movements in a treatment plan, such as the pattern shown in Figure 3 below.

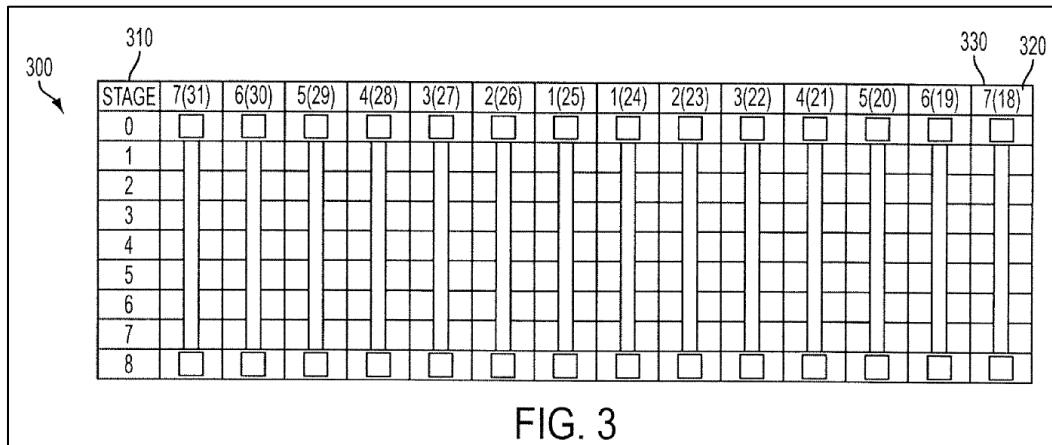


Figure 3 shows what the patents call an “all-equal” pattern, in which all of a patient’s teeth move in parallel with one another. *Id.*, 2:37-39. Each column corresponds to a tooth (identified by the standard tooth number), and the rows represent the stages of a treatment plan. The solid line in each column identifies the stages during which the respective tooth is moving. In this “all-equal”

pattern of Figure 3, all of the teeth move in parallel—they all begin moving at stage 0, and finish moving at stage 8.

The patents also identify various other patterns besides an “all-equal” pattern, including an A-shaped pattern, a V-shaped pattern, a mid-line shift pattern, and an M-shaped pattern (collectively the “Patent Terms”). All of the patterns are ordinary, conventional ways of moving teeth, but as explained below, the terms themselves are not commonly used terms in orthodontics, and the Treatment Planning Patents therefore include specific definitions for each of these Pattern Terms (*see, e.g., id.*, 6:51-56, 7:49-58, 9:12-26, 10:19-28, 11:41-53). Align has agreed to a construction for “all-equal pattern” that follows the specification’s definition, but Align disputes that the other four pattern terms require construction.

A. “through at least one of staggering and roundtripping of at least one dental object”

Claim Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
“through at least one of staggering and round-tripping of at least one dental object” '444 patent, cl. 1	through assessment of both staggering and roundtripping with respect to avoiding collisions with or obstructions between at least one dental object	by staggering or roundtripping at least one dental object

Claim 1 of the '444 patent recites “[a] computer-implemented method” for staging the movement of “dental objects” (e.g., teeth). As part of that method, the claim requires the host computer to determine an order of movement “such that the dental objects avoid colliding with or obstructing each other on their respective routes ... through at least one of staggering and round-tripping of at least one dental object.” The parties agree on the meaning of “staggering” and the meaning of “round-tripping,” which are defined in the patent and which, as explained in the patent background section above, refer to techniques for changing the timing and direction of tooth

movements. *See* '444 patent, 12:44-48, 12:51-55. The parties disagree about the meaning of the underlined phrase above—“through at least one of staggering **and** round-tripping of at least one dental object.” Align proposes to change the claim wording—switching “and” to “or”—while ClearCorrect proposes to construe the phrase conjunctively, consistent with the claim language, the Federal Circuit’s decision in *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870 (Fed. Cir. 2004), and Align’s own statements during IPR proceedings.

In *SuperGuide*, the Federal Circuit interpreted a claim term that recited “at least one of” followed by a conjunctive list of categories (“storing **at least one** of a desired program start time, a desired program end time, a desired program service, **and** a desired program type”) to require at least one of each category in the conjunctive list. 358 F.3d at 884-85. The Federal Circuit applied a basic “grammatical principle” and held that the phrase “at least one of” required “that the user select at least one value for each category.” *Id.* at 886.

In an IPR challenging the '444 patent, Align invoked *SuperGuide* and argued that “staggering **and** round-tripping” “require[s] both ‘staggering and round-tripping,’ rather than one or the other.” Ex. B [IPR2017-01829, Paper 7 (Patent Owner’s Preliminary Response)] at 5 (citing *SuperGuide*, 358 F.3d at 886). Align argued that “[t]he claimed list is thus conjunctive rather than disjunctive and requires all members of the list.” *Id.* at 8. Align argued that this construction was consistent with the specification: Align explained that Fig. 2B of the '444 patent illustrates how the claimed system, when “determining … an order of movement for each respective dental object,” first “decid[es] on a movement pattern to use,” then “determine[s] whether the selected movement pattern should be modified” by “assess[ing] several non-mutually exclusive options which include staggering and round tripping as those recited in claim 1.” *Id.* at 10-12. Align further argued that if it had “intended ‘and’ to mean ‘or,’” it “would have explicitly used ‘or.’” *Id*

at 13. Align then pointed out that “this is precisely what the Patent Owner has done with respect to similar features in claims of a continuation of the ’444 Patent” (the ’830 patent), which claims “at least by staggering **or** round-tripping at least one dental object.” *Id.* at 13-14.

Align should be held to its choice to claim “staggering **and** round-tripping,” particularly in view of Align’s later reaffirmation of its choice in the ’444 patent IPR. *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1362 (Fed. Cir. 2017) (“[S]tatements made by a patent owner during an IPR proceeding, whether before or after an institution decision, can be considered for claim construction and relied upon to support a finding of prosecution disclaimer.”); *see also Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (“Any statement of the patentee in the prosecution of a related application as to the scope of the invention would be relevant to claim construction, and the relevance of the statement made in this instance is enhanced by the fact that it was made in an official proceeding in which the patentee had every incentive to exercise care in characterizing the scope of its invention.”).

ClearCorrect’s proposed construction matches precisely Align’s own characterization of this term in the IPR. Align told the PTAB that “a person having ordinary skill in the art [] would have understood in light of the ’444 patent” that the term required “the assessment of both ‘staggering’ and ‘round-tripping’ with respect to avoiding collisions with or obstructions between ‘at least one dental object.’” Ex. B at 9-10. Based on Align’s statements, ClearCorrect’s construction appropriately construes the term “through at least one of staggering and round-tripping of at least one dental object” as “through assessment of both staggering and roundtripping with respect to avoiding collisions with or obstructions between at least one dental object.” *CUPP Computing AS v. Trend Micro Inc.*, 53 F.4th 1376, 1383 (Fed. Cir. 2022) (“a disclaimer in an IPR proceeding is binding in later proceedings, whether before the PTO or in court”).

Align, by contrast, attempts to avoid its prior construction and instead proposes a broader, disjunctive construction (“by staggering or roundtripping at least one dental object”). That is the construction that the PTAB ultimately applied during the IPR proceedings. Ex. C [IPR2017-01829, Paper 10 (Institution Decision)] at 8-9. But the PTAB was operating under the broadest-reasonable-interpretation standard, which is inapplicable here. *Realtime Adaptive Streaming L.L.C. v. Sling TV, L.L.C.*, 113 F.4th 1348, 1357 (Fed. Cir. 2024) (Albright, J.) (under “broadest reasonable interpretation standard of claim construction,” the Board may adopt “a broader construction” than district court). In the IPR, Align made clear that the narrower, conjunctive *SuperGuide* construction was the plain and ordinary meaning under *Philips*. Ex. B at 8 (“Such construction under plain and ordinary meaning is also equally applicable under broadest reasonable interpretation.”). Because the *Philips* standard applies here in this litigation, the Court should adopt the construction that Align told the PTAB was the plain and ordinary meaning of the term. This Court should “take the patentee at its word and … not construe the scope of the [’444] patent’s claims more broadly than the patentee itself clearly envisioned.” *Microsoft*, 357 F.3d at 1350.

B. “an optimal number of stages for the order of movement of the dental objects”

Claim Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
“an optimal number of stages for the order of movement of the dental objects.” ’444 patent, cl. 5, 19, 33	Indefinite	the largest number of the minimum stages needed to place the patient’s teeth in their final, desired position

A term of degree that is “purely subjective” and depends “on the unpredictable vagaries of any one person’s opinion” is indefinite. *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342,

1350-51 (Fed. Cir. 2005). Three claims of the '444 patent require the computer to determine “an optimal number of stages for the order of movement of the dental objects.” *See* '444 patent, cls. 5, 19, 33. The parties dispute whether the term “optimal”—a subjective term of degree—is indefinite as used in these claims. The claims, specification, prosecution history, and extrinsic evidence confirm that “an optimal number of stages for the order of movement of the dental objects” is indefinite. There is simply no guidance to “provide objective boundaries for those of skill in the art” to know with reasonable certainty whether or not they are acting within the scope of the claim. *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014).

First, nothing in claims 5, 19, and 33 describes how a skilled artisan would assess what constitutes an “optimal” number of treatment stages. This contrasts with the corresponding dependent claims. For example, claim 6 provides specific steps to determine an “optimal” number of stages: “determining a total distance …; dividing the total distance for each dental object by its respective maximum speed …; determining a number of non-movement stages …; adding the number of movement stages to the number of non-movement stages for each dental object to determine a minimum number of stages for each respective dental object; and selecting the largest of the minimum number of stages.” The steps of claim 6 provide one way to determine what constitutes an “optimal” number of stages, but under basic principles of claim differentiation, that way is just one example of how an “optimal” number of stages may be determined. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314-15 (Fed. Cir. 2005) (*en banc*) (“[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.”).

Second, the specification provides no objective boundaries for a person of ordinary skill to know whether a number of stages is optimal and therefore within the scope of the claim. When

describing how to determine “[t]he optimum number of stages,” the patent provides a list of factors that may be considered, including “the type of pattern needed, the rate, the path, the distance, staggering, slowing down/interim key framing, and/or round-tripping in determining the optimum number of stages for treating the patient’s teeth.” ’444 patent, 14:65-15:3; *see also id.*, Fig. 11. The specification discusses the multiple different movement patterns that could be considered and when they might be considered. *Id.*, 5:40-67 (providing that an “all-equal” pattern could be used for less “complex movements”). The specification explains that the system selection of a movement pattern can also depend on undefined “other treatment criteria,” and that the system may consider not only “various known orthodontic treatment protocols,” but also “any devised hereinafter. *Id.*, 6:1-14. Each of these factors—and likely many others—could affect the number of stages used in any treatment plan, but without any definition or metric to determine how to balance these many factors, a person of skill in the art is unable to know whether a chosen number of stages is “optimal” and therefore whether or not it falls within the scope of the claim. *See Interval*, 766 F.3d at 1371 (“[A] term of degree fails to provide sufficient notice of its scope if it depends on the unpredictable vagaries of any one person’s opinion.” (internal quotations omitted)).

Third, the prosecution history confirms that “optimal” is indefinite. In a related patent application, the Examiner rejected claims that required the “the calculation of ‘an optimal number of stages.’” Ex. D [U.S. Patent No. 9,326,830 File History, Nov. 20, 2012 Office Action], 5; *see also Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc.*, 265 F.3d 1294, 1305-06 (Fed. Cir. 2001) (“The prosecution history of a related patent can be relevant if, for example, it addresses a limitation in common with the patent in suit.”). The Examiner rejected the claims because “optimal” “is a term of degree as applied to orthodontics,” and it was therefore “unclear what may

be considered an ‘optimal number’ of stages in orthodontic treatment.” Ex. D, 5. The Examiner explained specifically why the term is indefinite:

[t]he number of stages represents a compromise between treatment time and patient comfort, taking into account the maximum force than can be applied to the various types of teeth. Because of this, and individual patient tolerances for pain, the ‘optimal number’ of stages may be considered the shortest treatment time possible, the shortest treatment time with significant patient comfort, the shortest treatment time for specified force levels for individual teeth, etc.

Id. Rather than dispute the Examiner’s conclusion, Align amended the claims “to eliminate the recitation of ‘optimal.’” Ex. E [830 Patent File History, Feb. 20, 2013 Response to Nov. 20, 2012 Office Action], 10.

Fourth, extrinsic evidence further shows that “optimal” is indefinite. For example, Dr. Harrell—an orthodontist with over 40 years of experience and a professor of orthodontics—explains that orthodontists consider many factors when creating a treatment plan, and there is no single definition of optimality in orthodontics that would allow a person of skill in the art to know whether the number of stages in a treatment plan is “optimal.” Ex. F [Declaration of William Harrell, Jr., DMD], ¶¶ 53-56; *see also* Ex. G [Declaration of Zixiang Xiong, Ph.D] ¶ 116 n.3. Dr. Harrell’s opinion is consistent with dictionary definitions for the term “optimal,” which show that the term requires a determination of what is best, most favorable, or most desirable—i.e., measures that are inherently subjective absent some clearly defined, objective metric. *See, e.g.*, Ex. H [American Heritage Dictionary (4th ed) 2004] at 977 (defining optimal as “most favorable or desirable”); Ex. I [Mosby’s Dental Dictionary (2004)] at 447 (defining optimal as “the best or most favorable”); Ex. J [Merriam-Webster’s Medical Desk Dictionary (2002)] at 576 (defining optimal as “most desirable or satisfactory”).

This case is on all fours with *Network System Technologies, LLC v. Texas Instruments Inc.*, 2:22-cv-482, Dkt. 150 (E.D. Tex. Jan. 3, 2024) (Ex. V), where the court held that the phrase an

“optimal amount of data to be buffered” was indefinite. The court found that the specification and claims provided “a list of potential connection properties” that could be used to determine an “optimal amount of data to be buffered.” *Id.* at 53. But the patent failed to “provide any indication to a POSITA what aspect or combination of these ‘connection properties’ may facilitate the determination of an ‘optimal amount of data.’” *Id.* Accordingly, the court held that an “optimal amount” was “purely subjective” and depended “on the unpredictable vagaries of any one person’s opinion,” thereby rendering the claims indefinite. *Id.* (quoting *Datamize*, 417 F.3d at 1350-51).

Align’s proposed construction is wrong and does not even fix the indefiniteness problem. Align’s proposed construction—“the largest number of the minimum stages needed to place the patient’s teeth in their final, desired position”—attempts to resolve the claims’ indefiniteness by taking language from dependent claims 6, 20, and 34 (“selecting [select] the largest of the minimum number of stages”) and reading it into claims 5, 19, and 33. But there is simply no basis to rewrite claims 5, 19, and 33 to include a limitation that is already in a claim that depends from them. *See, e.g., Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir. 2006) (“[C]laim differentiation’ refers to the presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim.”). Indeed, the limitation from claims 6, 20, and 34 that Align wants to add to claims 5, 19, and 33 is described in the specification as merely one way to determine the optimum number of stages, not as a definition of what “an optimal number of stages” means. *See* ’444 patent, 15:9-12 (“In another exemplary embodiment, ***the optimum number of stages is the largest number of the minimum stages needed to place the patient’s teeth in their final, desired position.***”); *Comaper Corp. v. Antec, Inc.*, 596 F.3d 1343, 1348 (Fed. Cir. 2010) (“caution[ing] against limiting claims to a preferred embodiment”).

Finally, Align’s proposed construction does not even make the claims definite, because it does not inform a person of skill how “the minimum stages needed to place the patient’s teeth in their final, desired position” would be determined. Whereas the *other* limitations in claims 6, 20, and 34 provide some guidance on that issue, the language from claims 6, 20, and 34 that Align wants to add to claims 5, 19, and 33 does not. There is no single metric in the claims, the specification, or in standard orthodontic practice for determining “the minimum number of stages needed to place the patient’s teeth in their final, desired position”— which would again depend on a variety of factors that would need to be weighed against each other (e.g., what movement pattern was chosen, whether the teeth were being moved at their maximum rate or a slower rate, etc.). *See* Harrell Decl. ¶¶ 37-43, 53-56; Ex. D, 5.

In sum, Align’s proposed construction is inconsistent with the specification, wrongly attempts to import limitations from other claims, and still does not solve the indefiniteness problem. The Court should hold that “an optimal number of stages for the order of movement of the dental objects” is indefinite.

C. The Pattern Terms

Claim Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
“V-shaped pattern” ’444 patent, cls. 8, 22, 36 ’456 patent, cl. 3	“A pattern where teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position, and where the most posterior-positioned teeth move first (e.g., the molars, or teeth in position 7 and/or 8) then the next anterior-positioned teeth move sequentially until all of the teeth reach their final position, with the next anterior-positioned tooth not scheduled to begin moving until at least approximately the half-way stage of its respective posterior-positioned tooth”	No construction is necessary.

Claim Term	ClearCorrect's Proposed Construction	Align's Proposed Construction
“A-shaped pattern” ’444 patent, cls. 9, 23, 37 ’456 patent, cl. 3	“A pattern where teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position, with the most anterior-positioned teeth (e.g., the incisors, or teeth in positions 1 and/or 2) moving first and then the next posterior-positioned teeth sequentially moving until all of the teeth reach their final position”	No construction is necessary.
“M-shaped pattern” ’444 patent, cls. 10, 24, 38 ’456 patent, cl. 3	“A pattern where teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position, with teeth between the anterior teeth and the posterior teeth (e.g., the bicuspids, or teeth in positions 4 and/or 5) and both the adjacent anterior and/or adjacent posterior teeth then sequentially moving until all of the teeth reach their final position”	No construction is necessary.
“mid-line shift pattern” ’444 patent, cls. 11, 25, 39 ’456 patent, cl. 3	“A pattern where tooth movement begins on one side of the patient’s arch to center the teeth with respect to the mid-line of the patient’s mouth, with the next tooth/teeth to move not scheduled to begin moving until at least approximately the half way stage of its respective previously scheduled tooth/teeth”	No construction is necessary.

Claims 8-11, 22-25, 36-39 of the ’444 patent and claim 3 of the ’456 patent refer to one or more “movement patterns” that a computer system can use to stage the movement of a patient’s teeth. The patterns define how each tooth is scheduled to move from its initial position to its final position. The specification explains that “[a]fter the system user and/or computer program has decided which pattern to utilize, the system user can determine, and/or computer program is configured to determine, if the pattern should be modified to accommodate the teeth movement of the current patient to avoid collision.” ’444 patent, 6:27-31.

The claims specifically refer to five patterns—an all-equal pattern, a V-shaped pattern, an A-shaped pattern, an M-shaped pattern, and a mid-line shift pattern. *See, e.g., id.*, cl. 8 (“ordering the movement of the dental objects to form a V-shaped pattern”); ’456 patent, cl. 3 (“wherein the schedule of movement includes one of an all-equal pattern, an A-shaped pattern, a V-shaped pattern, a mid-line shift pattern, or a M-shaped pattern”). Although the patterns are conventional ways of moving teeth, the pattern **terms** are terms of Align’s creation—the terms are used in the Treatment Planning Patents and in other Align patents (*e.g.*, U.S. Patent No. 6,729,876), but have no commonly understood meaning in orthodontics or in the software and programming field. *See* Harrell Decl. ¶¶ 47-50; Xiong Decl. ¶¶ 167, 178, 189, 200, 211. The pattern terms do not appear in common textbooks, do not appear in papers unrelated to Align, and are not taught in orthodontic training. *See* Harrell Decl. ¶¶ 47-50.

The parties dispute whether four of the five “pattern” terms should be construed as the specification lexicographically defines them (ClearCorrect’s position) or should be left for the jury to figure out without the help of any construction (Align’s position). For the fifth pattern term (“all-equal pattern”), Align has agreed that ClearCorrect’s construction—which is based on the specification’s definition and mirrors the same type of definitional language in the specification proposed for the other four terms—should govern the construction.

As shown below, ClearCorrect’s proposed constructions for the four disputed terms mirror the specification’s definitions.

Term	Specification’s Definition	ClearCorrect’s Proposed Construction
All-equal pattern	“In accordance with one exemplary embodiment of the invention, the ‘all-equal’ pattern provides that <u>all of a patient’s teeth move in parallel with one another</u> . <u>In other words, all of the patient’s teeth that need to move begin</u>	A pattern where <u>all of a patient’s teeth move in parallel with one another</u> (i.e., <u>all of the patient’s teeth that need to move begin moving at the same stage, and finish moving at the same stage</u>)

Term	Specification's Definition	ClearCorrect's Proposed Construction
	<p><u>moving at the same stage, and finish moving at the same stage.” ’444 patent, 6:51-56</u></p>	
V-shaped pattern	<p>“In accordance with one exemplary embodiment of the invention, the ‘V-shaped’ pattern provides that <u>teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position</u>. Moreover, the ‘V-shaped’ pattern begins by <u>moving the most posterior-positioned teeth (e.g., the molars, or teeth in position 7 and/or 8) then sequentially moving the next anterior-positioned teeth until all of the teeth reach their final position</u>. The next anterior-positioned teeth are not scheduled to begin moving until at least approximately the half-way stage of its respective posterior-positioned tooth.” ’444 patent, 9:12-26</p>	<p>A pattern where <u>teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position</u>, and where <u>the most posterior-positioned teeth move first (e.g., the molars, or teeth in position 7 and/or 8) then the next anterior-positioned teeth move sequentially until all of the teeth reach their final position</u>, with <u>the next anterior-positioned tooth not scheduled to begin moving until at least approximately the half-way stage of its respective posterior-positioned tooth</u></p>
A-shaped pattern	<p>“In accordance with one exemplary embodiment of the invention, the ‘A-shaped’ pattern provides that <u>teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position</u>. Moreover, the ‘A-shaped’ pattern begins by <u>moving the most anterior-positioned teeth (e.g., the incisors, or teeth in positions 1 and/or 2) moving first and then the next posterior-positioned teeth sequentially moving until all of the teeth reach their final position</u>.” ’444 patent, 7:49-58</p>	<p>“A pattern where <u>teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position</u>, with <u>the most anterior-positioned teeth (e.g., the incisors, or teeth in positions 1 and/or 2) moving first and then the next posterior-positioned teeth sequentially moving until all of the teeth reach their final position</u>”</p>
M-shaped pattern	<p>“In accordance with one exemplary embodiment of the invention, the ‘M-shaped’ pattern provides that <u>teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach</u></p>	<p>A pattern where <u>teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position</u>, with <u>teeth between the anterior teeth and the posterior teeth (e.g., the bicuspids, or</u></p>

Term	Specification's Definition	ClearCorrect's Proposed Construction
	<p><u>their final position</u>. Moreover, the ‘M-shaped’ pattern begins by <u>moving teeth between the anterior teeth and the posterior teeth</u> (e.g., the bicuspids, or <u>teeth in positions 4 and/or 5</u>) then <u>sequentially moving both the adjacent anterior and/or adjacent posterior teeth until all of the teeth reach their final position</u>.” ’444 patent, 11:41-53</p>	<p><u>teeth in positions 4 and/or 5) and both the adjacent anterior and/or adjacent posterior teeth then sequentially moving until all of the teeth reach their final position</u></p>
Mid-line shift pattern	<p>“In accordance with one exemplary embodiment of the invention, the mid-line shift pattern provides that <u>tooth movement begins on one side of the patient’s arch to center the teeth with respective to the mid-line of the patient’s mouth</u>. <u>The next tooth/teeth to move is/are not scheduled to begin moving until at least approximately the half way stage of its respective previously-scheduled tooth/teeth</u>.” ’444 patent, 10:19-28</p>	<p><u>A pattern where tooth movement begins on one side of the patient’s arch to center the teeth with respective to the mid-line of the patient’s mouth, with the next tooth/teeth to move not scheduled to begin moving until at least approximately the half way stage of its respective previously scheduled tooth/teeth</u></p>

Federal Circuit law is clear that “[w]hen a patentee defines a claim term, the patentee’s definition governs.” *Honeywell Int’l, Inc. v. Universal Avionics Sys. Corp.*, 493 F.3d 1358, 1361 (Fed. Cir. 2007); *see also Kyocera Senco Indus. Tools Inc. v. Int’l Trade Comm’n*, 22 F.4th 1369, 1378-79 (Fed. Cir. 2022) (“Because the patentee clearly defined ‘driven position’ in the written description, that definition controls.”).

Align may argue that the above definitions do not control because the definitional language includes the following lead-in wording, “In accordance with one exemplary embodiment of the invention. . . .” But that language simply indicates that each defined pattern (e.g., the A-shaped pattern or the V-shaped pattern) is itself one embodiment of the ***overall purported invention***; it does not suggest that each quoted definition is just one embodiment of that particular pattern. That much is clear from the patent, which repeatedly throughout the specification sets off each pattern term with quotation marks—indicating a specialized, defined term in the patent. *See, e.g.*, ’444

patent, 5:44-47 (“For patients having too much space between teeth (i.e., gaps between teeth), the system user can enable the program to be configured to utilize an ‘A-shaped pattern[.]’”). And when the specification then provides definitions for the pattern terms, it again sets off the terms with quotation marks, indicating a **definition** of the pattern, not merely an example of the pattern. *See, e.g., id.*, 7:51-54 (“[T]he ‘A-shaped’ pattern provides that teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position.”). The specification’s use of the pattern terms “set off by quotation marks” creates a “strong indication that what follows is a definition.” *Sinorgchem Co., Shandong v. Int’l Trade Comm’n*, 511 F.3d 1132, 1136 (Fed. Cir. 2007) (“The term ‘controlled amount’ is set off by quotation marks—often a strong indication that what follows is a definition[.]”).

Despite the specification’s clear definition of the pattern terms, and even though the terms have no well-understood meaning in the field of orthodontics, Align proposes that the pattern terms do not require construction. That approach would wrongly leave it to the jury to figure out, for example, what a “mid-line shift pattern” is and how it differs from an “M-shaped pattern.” There is no reason to put that burden on the jurors, especially when the patent specification sets forth the inventors’ own clear definitions of the pattern terms. The Court should adopt ClearCorrect’s construction, which mirrors the inventors’ definitions.

D. The Means-Plus-Function Terms

Claims 15 to 28 of the ’444 patent recite multiple terms that follow the conventional means-plus-function form: they start with the term “means for” and then identify a function. The parties agree that these terms are subject to 35 U.S.C. § 112 ¶ 6. But as explained below, these claim terms are indefinite because the specification discloses that the claimed functions are performed by software on a general-purpose computer, but the specification does not disclose the algorithm required to perform the function, as required by *Aristocrat Technologies Australia Pty Ltd. v.*

International Game Technology, 521 F.3d 1328 (Fed. Cir. 2008). *See Digital Retail Apps, Inc. v. H-E-B, LP*, 2020 WL 376664, at *6 (W.D. Tex. Jan. 23, 2020) (Albright, J.) (claim indefinite where plaintiff “point[ed] to no algorithm or any other specific instructions that address each of the required functions.”).

Moreover, Align’s proposed constructions for these terms are entirely improper: instead of following Federal Circuit case law by identifying the function and any corresponding structure in the specification, Align proposes a construction that expansively paraphrases from the specification, with only an “e.g.” citation to purported structure in the specification. Such an approach is improper for a means-plus-function claim. *See Northrop Grumman Corp. v. Intel Corp.*, 325 F.3d 1346, 1350 (Fed. Cir. 2003) (“In construing a means-plus-function limitation, a court must identify both the claimed function and the corresponding structure in the written description for performing that function.”).

1. Align Improperly Tries to Expand the Means-Plus-Function Terms

To prove infringement of a means-plus-function claim, “the plaintiff must show that the accused device performs the recited function through structure that is the same as or equivalent to the corresponding structure set forth in the specification.” *Baran v. Medical Device Techs., Inc.*, 616 F.3d 1309, 1316-17 (Fed. Cir. 2010); *see also Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 948 (Fed. Cir. 2007) (“[I]n return for generic claiming ability, the applicant must indicate in the specification what structure constitutes the means.”). Accordingly, it is black-letter law that “[a]fter identifying the claimed function, the court must then determine what structure, if any, disclosed in the specification corresponds to the claimed function.” *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002).

Align’s constructions impermissibly seek to expand the Means-Plus-Function Terms by not identifying a function and a specific structure from the specification as required by Federal Circuit case law. Instead, Align proposes that the Means-Plus-Function Terms be given a broad construction that (1) describes a general type of structure that could perform the claimed function, and (2) includes equivalents of that **generalized structure**—thereby not limiting the construction to the **actual structure** disclosed in the specification and equivalents **of that structure**. See, for example, the construction Align proposes below:

Term	Align’s Proposed Construction
“means for determining a total distance each respective dental object will move;” ’444 patent, cl. 20	a computer program for determining a total distance each respective dental object will move and equivalents E.g., ’444 patent, 4:58-5:10

Align’s construction simply replaces “means” with “a computer program” and then cites a short passage from the specification as an “e.g.” citation. As explained below, the portion of the specification that Align cites does not come close to disclosing sufficient structure as required by *Aristocrat*. But put that problem aside for the moment: even if the specification did disclose a sufficient structure, Align’s construction would wrongly broaden the claim so it covers more than just that disclosed structure plus equivalents: it would cover Align’s expansive paraphrase of a general type of structure, plus equivalents of that general type of structure. The Patent Act is clear, however, that means-plus function elements “shall be construed to cover the corresponding structure, material, or acts **described in the specification** and equivalents **thereof**.” 35 U.S.C. § 112 ¶ 6. Align cannot engage in expansive paraphrasing and rewriting of the language of the specification to broaden the Means-Plus-Function Terms.

As another example, Align provides the following proposed construction that again fails to identify a function and structure for the means-plus-function term:

Term	Align's Proposed Construction
“means for receiving an electronic representation of each dental object of the plurality of dental objects in relation to one another”	a computing device and equivalents E.g., '444 patent, 5:12-16
'444 patent, cl. 15	

Here, Align entirely omits the function from the claim construction and would construe the means-plus-function term as simply “a computing device and equivalents,” again with only an “e.g.” citation to the specification. Besides improperly reading the function out of the claim, Align’s construction ignores the specification passage it cites, which refers not simply to any “computing device” but to computing devices “*configured to receive*” the respective electronic representations. '444 patent, 5:12-16. This is improper. *See C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1361 (Fed. Cir. 1998) (“[I]t is incorrect to construe terms in means-plus-function form as disembodied from the structure in the specification.”).⁴ Align’s expansive construction would potentially read on *any* computing device regardless of whether it is configured to receive electronic representations of dental objects or desired final positions.

2. The Specification Fails to Disclose Adequate Structure for the Means-Plus-Function Terms

Federal Circuit law is clear that when a specification describes the use of software to perform a claimed function of a means-plus-function limitation, the corresponding structure is limited to the software algorithm disclosed in the specification and equivalents thereof. *See WMS*

⁴ As discussed in more detail in below, the specification passages that Align cites provide no information regarding *how* the configuration occurs (i.e., there is no disclosure of any software or algorithm), rendering this claim term (and its dependents) indefinite.

Gaming, Inc. v. Int'l Game Tech., 184 F.3d 1339, 1348-49 (Fed. Cir. 1999). Moreover, “[i]t is well settled that ‘[s]imply disclosing software … without providing some detail about the means to accomplish the function[,] is not enough.’” *Function Media, LLC v. Google Inc.*, 708 F.3d 1310, 1318 (Fed. Cir. 2013) (internal quotations omitted). “For a patentee to claim a means for performing a particular function and then to disclose only a general purpose computer as the structure designed to perform that function amounts to pure functional claiming.” *Aristocrat*, 521 F.3d at 1333-34. Instead, for a means-plus-function claim to be definite, the law “require[s] the specification to disclose the algorithm for performing the function.” *Function Media*, 708 F.3d at 1318.

The Means-Plus-Function Terms are all part of a claimed “system for staging the movement of a plurality of dental objects” that is recited in claim 15. There is no dispute that the only disclosed physical structure in the specification for these terms is a general-purpose computer, but the specification consistently fails to identify the required software algorithm for performing the required functions. As explained below, Align’s means-plus-function terms lack sufficient structure in the specification and are therefore indefinite.

a) *No Sufficient Disclosed Structure for “means for receiving an electronic representation of each dental object of the plurality of dental objects in relation to one another”*
(Claim 15 and dependents)

Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
“means for receiving an electronic representation of each dental object of the plurality of dental objects in relation to one another” ’444 patent, cl. 15	Subject to § 112 ¶ 6 <ul style="list-style-type: none"> • <u>Function</u>: receiving an electronic representation of each dental object of the plurality of dental objects in relation to one another • <u>Structure</u>: None Indefinite	a computing device and equivalents E.g., ’444 patent, 5:12-16

As discussed above in Section II.D.1, claim 15 requires “means for receiving an electronic representation of each dental object of the plurality of dental objects in relation to one another.” The passage in the specification that Align points to (’444 patent, 5:12-16) fails to disclose sufficient structure for this term. The passage states only that the “computing device is configured to receive an electronic representation.” Nowhere does the cited disclosure identify *how* the configuration is to occur—i.e., the specification never describes any software algorithm or other configuring steps that would allow the computing device to receive an electronic representation. *See* Xiong Decl. ¶¶ 41-45. Thus, claim 15 (and its dependents) are indefinite. *See, e.g., Function Media*, 708 F.3d at 1318-19 (requiring that the “*how*” of means-plus-function terms be disclosed in specification).

b) *No Sufficient Disclosed Structure for “means for determining an order of movement for each respective dental object such that the dental objects avoid colliding with each other ...” (Claim 15 and dependents)*

Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
<p>“means for determining an order of movement for each respective dental object such that the dental objects avoid colliding with each other on their respective routes from said initial position to said desired final position”</p> <p>’444 patent, cl. 15</p>	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: determining an order of movement for each respective dental object such that the dental objects avoid colliding with each other on their respective routes from said initial position to said desired final position • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program that performs the steps identified in Figure 2B and equivalents</p> <p>E.g., ’444 patent, 5:19-22, 5:29-6:46, Fig. 2B</p>

Claim 15 of the ’444 patent requires a “means for determining an order of movement for each respective dental object such that the dental objects avoid colliding with each other on their respective routes from said initial position to said desired final position.” There is no dispute that this term requires a “computer program” that ensures an order of movement in which dental objects will not collide with one another. Yet, the only portions of the specification that Align points to in its “e.g.” citations (’444 patent, 5:19-22, 5:29-6:46, and Fig 2B) do not disclose any software algorithm that would avoid collisions. *See, e.g.*, Xiong Decl ¶¶ 52-67.

The first cited portion simply says, “[t]he program stored within the computing device is configured to analyze the initial and final positions, and automatically create a route for each tooth to move from its initial position to its final position.” ’444 patent, 5:19-22. That is plainly not an algorithm; nor does even it mention collision avoidance. The second cited passage is much longer

but also fails to disclose any software algorithm. The passage starts (*id.*, 5:29-6:26) by describing different movement patterns that can be used to make an initial plan for the movement of teeth, but none of that involves avoiding collisions. Rather, the specification says that “[a]fter the system user and/or computer program has decided which pattern to utilize, the system user can determine, and/or computer program is configured to determine, if the pattern should be modified to accommodate the teeth movement of the current patient to avoid collision.” *Id.*, 6:27-31. But the only explanation of **how** a collision is to be avoided is a vague description of techniques that could be used but with no algorithm telling a POSITA how to order movements to avoid a collision:

In one embodiment, the program is configured to “stagger”, “round trip” and/or slow the movement (each of which is discussed below, respectively) of one or more teeth if the patient’s teeth cannot be moved without colliding with and/or obstructing another tooth/teeth. Based on that assessment, the program determines the most efficient path to take through some combination of patterns and accommodation of movement thereof.

Id., 6:39-46.⁵ Such a description is like being told that to get to a destination without crashing: you should perform some combination of making right turns, making left turns, and going straight, while resulting in the most efficient path. That is merely reciting an outcome, not providing an algorithm, and it is plainly not sufficient structure under Federal Circuit case law. *See Ibormeith IP, LLC v. Mercedes-Benz USA, LLC*, 732 F.3d 1376, 1381-82 (Fed. Cir. 2013) (finding claim indefinite where the specification “[a]t best” provided information “that a person of ordinary skill in the art could use to design his or her own method of weighting” but that was not sufficient because since “[a] description of an algorithm that places no limitations on how values are calculated, combined, or weighted is insufficient to make the bounds of the claim

⁵ Align’s citation to Figure 2B also does not help its argument because it merely summarizes the inadequate disclosure in the cited textual passages (’444 patent, 5:29-6:46). *See, e.g., Function Media*, 708 F.3d at 1318 (finding “citation to the flow charts … unavailing because the charts … do not describe how the … function is performed”).

understandable”); *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1365 (Fed. Cir. 2012) (finding claim indefinite where “[t]he specification merely provides functional language and does not contain any step-by-step process for controlling the adjusting means”); *Aristocrat*, 521 F.3d at 1334 (rejecting patentee’s argument that it was “not necessary for the patent to designate any particular algorithm to perform the claimed function” simply because “devising an algorithm to perform that function would be within the capability of one of skill in the art”; “that argument is contrary to this court’s law.”).

Finally, claims 16-28 all depend from claim 15 and therefore also are indefinite. Indeed, as explained below, these claims only introduce additional indefiniteness problems. *See Sections* **Error! Reference source not found. - II.D.2.g).**

- c) *No Sufficient Disclosed Structure for “means for determining a route each respective dental object will move to achieve its respective final position” and “means for determining (a), (b), and (c) in relation to each of the other dental objects” (claims 16, 17 and dependents)*

Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
“means for determining a route each respective dental object will move to achieve its respective final position” ’444 patent, cl. 16	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: determining a route each respective dental object will move to achieve its respective final position • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program that is configured to segment an initial digital dataset into digital models of individual dental objects and gingival tissue, calculate a transformation for each dental object, and then calculate one or more intermediate positions for each dental object, taking into account any constraints imposed on the movement of dental objects and any collisions that might occur between dental objects as the dental objects move from one treatment stage to the next and equivalents</p> <p>E.g., ’444 patent, 3:19-24, 3:36-61</p>

<p>“means for determining (a), (b), and (c) in relation to each of the other dental objects”</p> <p>’444 patent, cl. 17</p>	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: determining (a), (b), and (c) in relation to each of the other dental objects • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program that is configured to segment an initial digital dataset into digital models of individual dental objects and gingival tissue, calculate a transformation for each dental object, and then calculate one or more intermediate positions for each dental object, taking into account any constraints imposed on the movement of dental objects and any collisions that might occur between dental objects as the dental objects move from one treatment stage to the next and equivalents</p> <p>E.g., ’444 patent, 3:19-24, 3:36-61</p>
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Claim 16 of the ’444 patent recites “means for determining a route each respective dental object will move to achieve its respective final position.” This term also lacks sufficient disclosed structure in the specification.

Align points to two passages of the ’444 patent. The first passage (’444 patent, 3:19-24) merely states that one technique for designing an orthodontic treatment plan involves receiving initial data, specifying a desired final position, and calculating transformations that will move teeth to their final position. But the cited passage nowhere provides an algorithm for *how* the claimed function of “determining a route each respective dental object will move” will be performed—i.e., the passage does not explain how the “transformations” for the teeth are determined. *See, e.g.*, Xiong Decl. ¶¶ 69-72, 78.

The second passage (’444 patent, 3:36-61) also does not provide sufficient structure. *See, e.g.*, Xiong Decl. ¶¶ 69, 73-78. The passage starts by referring to Figures 1A, 1B, and 1C (’444 patent, 3:36-48), but those figures merely show three arrangements of a patient’s teeth; they disclose no algorithm for how to determine routes for moving teeth to their final positions. *See* ’444 patent, 2:27-29 (“FIGS. 1A, 1B, and 1C are diagrams showing the arrangement of a patient’s teeth at an initial stage, an intermediate stage, and a final stage, respectively, of orthodontic

treatment.”). The cited passage next states that a computer program can “calculate[]” intermediate positions for the teeth between their initial and final positions, “taking into account any constraints imposed on the movement of the teeth by the human operator or by the natural characteristics of the teeth themselves” and “account[ing] for any collisions that might occur.” *Id.*, 3:48-57. But that language provides no algorithm for *how* to do the required “calculat[ing].” The passage describes only an outcome—a treatment path without collisions. *See, e.g., Blackboard, Inc. v. Desire2Learn Inc.*, 574 F.3d 1371, 1383 (Fed. Cir. 2009) (algorithm missing where the patent “describes an outcome [but] not a means for achieving that outcome”); *Ibormeith IP*, 732 F.3d at 1381-82 (“A description of an algorithm that places no limitations on how values are calculated, combined, or weighted is insufficient to make the bounds of the claim understandable.”). Finally, the cited passage states that “[s]electing … the treatment paths along which the teeth move is described in more detail in one or more of the Patent Applications discussed above, which are all hereby incorporated by reference.” ’444 patent, 3:57-61. But “material incorporated by reference cannot provide the corresponding structure necessary to satisfy the definiteness requirement for a means-plus-function clause.” *Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc.*, 412 F.3d 1291, 1301 (Fed. Cir. 2005) (rejecting reliance on U.S. patent referenced in specification); *see also Fiber, LLC v. Ciena Corp.*, 792 F. App’x 789, 795 (Fed. Cir. 2019) (same).

Finally, claim 17 depends from claim 16 and recites “means for determining (a), (b), and (c) in relation to each of the other dental objects”—where (a), (b), and (c) are all defined functions in claim 16. Because claim 17 depends from claim 16, claim 17 is also indefinite. *See, e.g., Xiong Decl.* ¶¶ 95-105. Indeed, Align cites for the means term in claim 17 the same portion of the specification (’444 patent, 3:19-24, 3:36-61) that it did for the “means for determining a route” limitation of claim 16. But as explained above, that disclosure is not sufficient under Federal

Circuit case law. Likewise, because claim 18 depends from claim 17 and simply recites another means term, claim 18 is also indefinite. Accordingly, claims 16, 17, and 18 are indefinite.

d) *No Sufficient Disclosed Structure for “means for determining a rate at which each respective dental object will move along its respective route” and “means for determining a total distance each respective dental object will move” (Claims 16, 20, and dependents)*

Term	ClearCorrect's Proposed Construction	Align's Proposed Construction
<p>“means for determining a rate at which each respective dental object will move along its respective route”</p> <p>’444 patent, cl. 16</p>	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: determining a rate at which each respective dental object will move along its respective route • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program that determines a rate at which each respective dental object will move along its respective route</p> <p>E.g., ’444 patent, 4:58-5:10</p>
<p>“means for determining a total distance each respective dental object will move”</p> <p>’444 patent, cl. 20</p>	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: determining a total distance each respective dental object will move • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program for determining a total distance each respective dental object will move and equivalents</p> <p>E.g., ’444 patent, 4:58-5:10</p>

As shown in the chart above, for two of the means-plus-function terms—Involving “means for determining a rate at which each respective dental object will move along its respective route” and for “means for determining a total distance each respective dental object will move”—Align’s proposed construction simply substitutes “computer program” for “means” and then repeats verbatim (or nearly verbatim) the claimed function.

For both of these limitations, the only alleged structure that Align provides is an “e.g.” cite to the following passage from the ’444 patent, which does not identify any software algorithm for performing any function:

As those skilled in the art will appreciate, any computing device utilized by a user may include an operating system (e.g., Windows NT, 95/98/2000, OS2, UNIX, Linux, Solaris, MacOS, etc.) as well as various conventional support software and drivers typically associated with computers. As will be appreciated by one of ordinary skill in the art, each computing device may be embodied as a customization of an existing system, an add-on product, upgraded Software, a standalone system, a distributed system, a method, a data processing system, a device for data processing, and/or a computer program product. Accordingly, any program stored therein may take the form of an entirely software embodiment, an entirely hardware embodiment, or an embodiment combining aspects of both software and hardware. Further more, any program may take the form of a computer program product on a computer-readable storage medium having computer-readable program code means embodied in the storage medium. Any Suitable computer-readable storage medium may be utilized, including hard disks, CD-ROM, optical storage devices, magnetic storage devices, and/or the like.

’444 patent, 4:58-5:10. This passage from the ’444 patent specification makes no reference to any of the claimed functions. *See B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997) (“[S]tructure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.”). Nor does this passage identify *any* algorithm for performing *any* function. Such a generic recitation of computers and computer programs fails to disclose sufficient structure and renders these terms indefinite. *See Aristocrat*, 521 F.3d at 1333-34 (finding claim indefinite where specification disclosed only “appropriate programming” for performing function; “[T]he reference to ‘appropriate programming’ imposes no limitation whatever, as any general purpose computer must be programmed.”); *Fintiv, Inc. v. PayPal Holdings, Inc.*, 2023 WL 5423082, at *9 (W.D. Tex. July 21, 2023) (Albright, J.) (claim term indefinite where the specification portion identified

by plaintiff “merely describe[d] general computing structures, any of which could be used to implement any component of the system”); *see also* Xiong Decl. ¶¶ 86-92, 123-128.

Finally, because claims 17 and 18 depend from claim 16, they are also indefinite.

e) *No Sufficient Disclosed Structure for “means for adjusting at least one of the route and the rate of at least one dental object to avoid collision with at least one other dental object” (Claim 18)*

Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
<p>“means for adjusting at least one of the route and the rate of at least one dental object to avoid collision with at least one other dental object”</p> <p>’444 patent, cl. 18</p>	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: adjusting at least one of the route and the rate of at least one dental object to avoid collision with at least one other dental object • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program that performs collision avoidance via round-tripping, staggering, or slowing, wherein the computer program first attempts staggering of the teeth movement, followed by slowing-down/interim key frames if the staggering does not avoid collisions, and then followed by round-tripping as a last resort and equivalents</p> <p>E.g., ’444 patent, 12:41-65</p>

Claim 18 of the ’444 patent requires a “means for adjusting at least one of the route and the rate of at least one dental object to avoid collision with at least one other dental object.” As with the limitation “at least one of staggering and round-tripping” in claim 1 (discussed above in Section II.A), this limitation uses the language “at least one of” followed by a conjunctive list. Thus, for the reasons discussed in Section II.A (e.g., through the application of *SuperGuide*), this term requires a means for adjusting both route *and* rate. The portion of the specification Align cites to, however, fails to provide an algorithm that performs the function of adjusting both the route and the rate of at least one dental object to avoid collision with at least one other dental object. *See, e.g.*, Xiong Decl. ¶¶ 107-115.

Align's cited passage ('444 patent, 12:41-65) starts by stating that "in cases where teeth may collide with or obstruct one another during movement, the program is configured to suitably stagger, slow down and/or plan-round tripping for the teeth movement." '444 patent, 12:41-44. This does not provide any algorithm for adjusting the route and rate to avoid collision and thus does not provide sufficient structure. *See Ibormeith IP*, 732 F.3d at 1381-82. The next portion ('444 patent, 12:44-55) provides definitions for staggering, slowing down, and round tripping, but such definitions do not provide the necessary algorithm. They do not describe *how* to perform the claimed function. *See Function Media*, 708 F.3d at 1318-19. Finally, the remainder of the passage ('444 patent, 12:56-65) describes using staggering, slowing down, and/or round tripping either alone or in combination with one another. But that disclosure is also too vague to constitute an algorithm sufficient to give this term the required structure. Moreover, using "staggering" and "slowing down" without "round tripping" would change the rate but not the route of a patient's teeth, and therefore would not satisfy the claims' requirement of adjusting both the route and the rate. Thus, the structure Align points to is insufficient to perform the function.

f) *No Sufficient Disclosed Structure for “means for determining an optimal number of stages for the order of movement of the dental objects” (Claim 19)*

Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
<p>“means for determining an optimal number of stages for the order of movement of the dental objects”</p> <p>’444 patent, cl. 19</p>	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: determining an optimal number of stages for the order of movement of the dental objects • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program that determines an optimal number of stages by selecting the largest number of the minimum number of stages needed to place the dental objects in their final, desired positions and equivalents</p> <p>E.g., ’444 patent, 15:6-20</p>

Claim 19 of the ’444 patent requires a “means for determining an optimal number of stages for the order of movement of the dental objects.” As discussed in detail in Section II.B, the term “optimal number of stages for the order of movement of the dental objects” is indefinite because the “optimal number of stages” requires a subjective determination, and there are no objective boundaries for the term. Moreover, as discussed below, the portion of the specification Align cites to does not disclose sufficient structure for performing the required function. *See, e.g.*, Xiong Decl. ¶¶ 117-121.

In order to perform the function of “determining the largest number of the minimum stages needed to place the patient’s teeth in their final, desired position,” the software would need to determine the “number of minimum stages” for each dental object (or tooth). But nowhere does Align’s citation provide any information for how the number of minimum number of stages is determined. Rather, the cited passage starts by stating that “determining the optimum number of stages includes determining the minimum number of stages needed for each respective tooth to

be placed in its final, desired position.” ’444 patent, 15:5-9. This passage does not provide any information for how the “determining the minimum number of stages” is to be performed. Nor does any of the remainder of the passages provide such information. Thus, Align has not identified sufficient structure to perform the function and the claim should be found indefinite. *See, e.g., Blackboard, 574 F.3d at 1383 (algorithm missing where the patent “describes an outcome [but] not the means for achieving that outcome”).*

g) *No Sufficient Disclosed Structure for “means for ordering the movement of the dental objects in a V-shaped pattern” and “means for round tripping at least one dental object” (claims 22 and 27)*

Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
“means for ordering the movement of the dental objects in a V-shaped pattern” ’444 patent, cl. 22	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: ordering the movement of the dental objects in a V-shaped pattern • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program configured to utilize the pattern depicted in Figure 5 and equivalents</p> <p>E.g., ’444 patent, 9:12-15, 9:42-44, Fig. 5</p>
“means for round tripping at least one dental object” ’444 patent, cl. 27	<p>Subject to § 112 ¶ 6</p> <ul style="list-style-type: none"> • <u>Function</u>: round tripping at least one dental object • <u>Structure</u>: None <p>Indefinite</p>	<p>a computer program configured to move a first tooth out of the path of a second tooth, and once the second tooth has moved sufficiently, move the first tooth back to its previous position before proceeding to a desired final position of the first tooth and equivalents</p> <p>E.g., ’444 patent, 12:51-55</p>

Claim 22 of the '444 patent recites “means for ordering the movement of the dental objects in a V-shaped pattern,” while Claim 27 recites “means for round tripping at least one dental object.” The patent does not disclose any software algorithm for performing either of these functions. *See, e.g.*, Xiong Decl. ¶¶ 169-178, 218-221. Instead, Align cites only to specification passages that define the claimed function or the result of the claimed function, but that is not sufficient to disclose an algorithm for **how to perform** that function.

For example, for the means-plus-function term in claim 22—“means for ordering the movement of the dental objects in a V-shaped pattern”—Align cites one passage ('444 patent, 9:12-15) that merely states that a computer program can be “configured to utilize a ‘V-shaped’ pattern in staging a set of aligners to correct the teeth”—clearly not a disclosed algorithm. '444 patent, 9:12-15. Align also cites Figure 5 of the patent, which is described in the patent as showing “an example of a ‘V-shaped’ pattern.” *Id.*, 9:42-44. But that figure simply shows the **result** of ordering movements of dental objects in V-shaped pattern, not a software algorithm for **how** to perform the function. *See* Xiong Decl. ¶¶ 169-178. Align’s reliance on figures to show structure for the movement patterns is analogous to the argument that Federal Circuit rejected in *Aristocrat*. There—like here—the figures were “simply examples of the results of the operation of an unspecified algorithm” and thus provide “at most, pictorial … ways of describing the claimed function.” *Aristocrat*, 521 F.3d at 1335. “That is not enough to transform the disclosure … into the disclosure of sufficient structure to satisfy section 112 paragraph 6.” *Id.* Finally, Align cites 9:42-44, but that passage, as noted above, merely states that Figure 5 is an example of a V-shaped pattern and provides no algorithm.

Similarly, for the means-plus-function term in claim 27—“means for round tripping at least one dental object”—Align cites only a single passage of the specification ('444 patent, 12:51-55),

which defines round-tripping. *See* '444 patent, 12:51-55 (“Round-tripping is the technique of moving a first tooth out of the path of a second tooth, and once the second tooth has moved sufficiently, moving the first tooth back to its previous position before proceeding to a desired final position of that first tooth.”). That definitional passage simply restates the function (“round-tripping at least one dental object”); it does not provide a software algorithm for how to perform that function. Xiong Decl. ¶¶ 218-221.

Align’s cited disclosures do not provide sufficient structure for performing the claimed functions but rather are akin to a patentee attempting to improperly “claim all possible means of achieving a function,” which Federal Circuit case law forbids. *Blackboard*, 574 F.3d at 1385. Indeed, the Federal Circuit rejected a patentee’s similar attempt to support a “transmitting” means-plus-function limitation by citing portions of the specification that merely restated the transmitting function without explaining how the function was achieved. *Function Media*, 708 F.3d at 1318-19 (“These citations all explain that the software automatically transmits, but they contain no explanation of **how** the PGP software performs the transmission function.”). Similarly, the Federal Circuit has repeatedly held that merely disclosing the results to be achieved by performing a recited function does not provide a sufficient disclosure because it does not tell a person of skill what software algorithm is used to perform the function. *See Aristocrat*, 521 F.3d at 1334 (rejecting reliance on mathematical equation that was “not an algorithm that describes how the function is performed, but is merely a mathematical expression that describes the outcome of performing the function”); *In re Aoyama*, 656 F.3d 1293, 1297-98 (Fed. Cir. 2011) (rejecting reliance on flow chart that provided only “high level” disclosure of results to be obtained but no detail as to how to perform the operation to achieve those results). Under this Federal Circuit case law, these terms are indefinite.

III. THE COMPOSITE IMAGE PATENT (THE '936 PATENT)

Align has asserted claims 1, 4-17, and 20 of U.S. Patent No. 10,791,936 (Dkt. 1-9). The '936 patent claims priority to a provisional application filed on July 19, 2010.

The '936 patent is directed to creating a composite image of a patient's teeth based on multiple scans of a patient's teeth. In particular, the '936 patent refers to three-dimensional "virtual models" of a patient's teeth that are generated using scans from an intraoral scanner. *See* '936 patent, 1:30-49. The patent states that in some situations, a virtual model needs to be updated because the teeth have been "modified after obtaining the virtual model." *Id.*, 2:13-22. The patent states that "[s]uch situations would conventionally require a rescanning of the entire physical item [i.e., the teeth]," which can "involve significant additional time, inconvenience and ... may also involve significant patient discomfort." *Id.*, 2:16-21.

The '936 patent therefore proposes rescanning only the physically changed portion of the teeth (which may be a result of removal or modification of those teeth by the dentist) and integrating the new scan data with the existing data to create a composite image of the teeth. *See, e.g., id.*, 16:56-65 ("[T]he areas including the removed/modified teeth are rescanned and these replace the parts of the original virtual model corresponding to these teeth."). More specifically, claim 1 of the '936 patent requires a system that, among other things, (1) receives "first scan data" of a patient's teeth from a hand-held intraoral scanner; (2) receives user input defining a portion of the model to be removed; (3) removes that portion; (4) receives "second scan data" of the patient's teeth from the intraoral scanner, with "***the second scan data including surface data of a physically changed portion of the patient's intraoral cavity***"; and (5) replaces at least a portion of the removed portion using the received second scan data.

In allowing the claims of the '936 patent, the Examiner stated that the cited prior art "deal[s] only with recapturing scans of ***a static intra-oral region***." Ex. P ['936 Patent File History,

April 8, 2020 Notice of Allowance] at ALGN00005589-ALGN00005590. The Examiner found that the patent claims “distinguish[ed] over the art of record, and the art as a whole via reciting the updating scans to be directed to *scenarios where the intra-oral cavity (e.g. dentition) is modified in between the scans* (e.g. subjected to a surface preparation).” *Id.* In short, the purported novelty of the patent was based on the patent’s requirement of rescanning *after* a physical change to the scanned teeth.

This Court has previously dealt with the ’936 patent when Align asserted it against 3Shape A/S. The Court construed two of the patent’s terms (not at issue here) as having their plain and ordinary meaning. For a third set of terms (the “replacing” terms), the Court provided a preliminary construction, and the parties subsequently agreed to a slight modification of the Court’s preliminary construction. *See* Ex. L [August 19, 2021, Court’s Preliminary Construction in *Align Technology, Inc v. 3Shape A/S*, C.A. No. 20-cv-979] at ALGN00020499-ALGN00020500, ALGN00020503- ALGN00020504; Ex. M [*Align Technology, Inc v. 3Shape A/S*, No. 20-cv-979, Dkt. 149 (*Markman* Hearing Transcript)] at 42:18-43:16; Ex. N [Parties’ Claim Construction Summary Chart] at ALGN00024053. As explained below, the first dispute between the parties in this litigation relates to those “replacing” terms that this Court already construed (e.g., the “H.1” term in the *3Shape* litigation). Notwithstanding Align’s prior agreement to a construction for these terms,⁶ Align now proposes that the “replacing” terms do not need a construction.

⁶ Ex. M at 42:18-43:16 (counsel stating that the parties “spoke in the break about a modification to the Court’s proposed construction [of the H.1 term], and the parties are, I believe, in agreement as to that modification”); Ex. N at ALGN00024053 (citing to “Agreement of parties”).

A. “replace [replacing] at least a portion of the [removed] surface portion of the model [...] using the received second scan data [at least a portion of the second scan data]”

Claim Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
“replace [replacing] at least a portion of the [removed] surface portion of the model [...] using the received second scan data [at least a portion of the second scan data]” ’936 patent, cls. 1, 9, 17	[register] / [registering] the [received] second scan data with a retained portion of the model after removing the scan data of the removed surface portion	No construction is necessary.

As noted above, Align previously asserted the ’936 patent in this Court against 3Shape A/S, and the Court held a *Markman* hearing to construe disputed terms. *See Ex. M (Markman transcript)*. ClearCorrect’s proposed construction is the same as the construction Align agreed to in the *3Shape* case involving the same term from the same ’936 patent. *See Ex. N at ALGN00024053*. Align, by contrast, now argues that no construction is necessary. The Court should adopt the same construction that Align agreed to in the *3Shape* litigation.

As 3Shape explained in the prior litigation, the ’936 patent specification does not disclose what steps or techniques are involved in “replac[ing]” beyond stating that the second scan data is registered to the model. For example, Figure 1 of the patent depicts “registering ...” as the only step following the acquisition of the second 3D virtual model and before outputting the composite 3D virtual model. ’936 patent, Fig. 1 (“registering” step 460). As such, the replace step should be interpreted to mean registering. *See Ex. U [Align Tech. v. 3Shape A/S, C.A. No. 20-cv-979, Dkt. 120 (3Shape’s Opening Markman Brief)] at 33*. Accordingly, to avoid inappropriately expanding the claim scope beyond what is actually disclosed in the patent, and thus rendering the claim invalid, the replacing terms should be construed as ClearCorrect has proposed, i.e., coextensive

with the patent's disclosure. *See Eastman Kodak Co. v. Goodyear Tire & Rubber Co.*, 114 F.3d 1547, 1556 (Fed. Cir. 1997) (claim terms should be construed to preserve validity).

In the *3Shape* litigation, this Court issued a preliminary construction consistent with *3Shape*'s proposal, and Align and *3Shape* then agreed to a construction nearly identical to the Court's preliminary construction. ClearCorrect's proposed construction is identical to the prior construction to which Align agreed.

“In general, prior claim construction proceedings involving the same patents-in-suit are entitled to reasoned deference under the broad principals of *stare decisis* and the goals articulated by the Supreme Court in *Markman*, even though *stare decisis* may not be applicable *per se*.” *Immersion Corp. v. Samsung Elecs. Am., Inc.*, 2018 WL 5005791, at *4 (E.D. Tex. Oct. 16, 2018) (internal quotations omitted); *see, e.g., Parkervision, Inc. v. Realtek Semiconductor Corp.*, No. 6:22-cv-1162-ADA, Dkt. 93 (W.D. Tex. Apr. 2, 2024) (Albright, J.) (despite “[t]he parties disput[ing] the constructions for terms that were at-issue in prior litigations … the Court adopts the final constructions from the prior litigations to be the final constructions in this case”); *TQP Development, LLC v. Intuit Inc.*, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) (Bryson, J.) (“[P]revious claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so.”); *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (noting “the importance of uniformity in the treatment of a given patent”) (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996)).

During the meet-and-confer process, Align has not identified any reason to depart from the prior claim construction. Accordingly, and following the case law cited above, ClearCorrect

proposes that the Court adopt the same construction that Align itself agreed to in the *3Shape* litigation and that was based on this Court’s own preliminary construction.

B. “second scan data of the patient’s teeth”

Claim Term	ClearCorrect’s Proposed Construction	Align’s Proposed Construction
“second scan data of the patient’s teeth” ’936 patent, cl. 17	“new scan data of the patient’s teeth after the patient’s intraoral cavity itself has physically changed”	No construction is necessary.

The ’936 patent includes three independent claims (claims 1, 9, and 17). Both claim 1 and claim 9 expressly include the requirement that the Examiner based the patent allowance on—i.e., the requirement that the “second scan data” include “surface data of *a physically changed portion of the patient’s intraoral cavity*.” Claim 17, by contrast, does not expressly recite that requirement. Align, however, stated clearly in IPR proceedings that the “second scan data” limitation in *all* of the ’936 patent claims refers to new scan data *after* the patient’s intraoral cavity itself has *physically changed*. The Court should construe claim 17 accordingly: “second scan data of the patient’s teeth” in claim 17 should be construed to mean “new scan data of the patient’s teeth after the patient’s intraoral cavity itself has physically changed.”

In the prior IPR proceeding for the ’936 patent, Align argued expressly that the “second scan data of the patient’s teeth” must be new scan data of the patient’s teeth after the patient’s intraoral cavity itself has physically changed. When referring to the prosecution history of the ’936 patent, Align explained that the Examiner “clearly understood that the claims are directed to updating an initial scan (the first scan data) with new scan data (the second scan data) of the intraoral structure *after the patient’s intraoral cavity itself has physically changed*.” Ex. O [IPR2021-01241, Paper 10 (Patent Owner Preliminary Response)], at 6. To avoid any doubt, Align

repeated the point, stating that the Examiner “understood that the language of the claims provides a temporal relationship between the first and second scans: specifically, it indicates that the ‘second scan’ is a ‘*post-change*’ scan while the ‘first scan’ is an ‘initial’ scan.” *Id.*⁷ Align relied on these arguments in the IPR to attempt to avoid institution and a finding of invalidity. *Id.* (“Petitioners’ arguments also substantially overlap with arguments considered during examination.”).

Align’s statements constitute a clear and unequivocal prosecution disclaimer regarding the scope of its claims. The Federal Circuit has expressly held that “statements made by a patent owner during an IPR proceeding can be considered during claim construction and relied upon to support a finding of prosecution disclaimer.” *Aylus*, 856 F.3d at 1361; *see also, e.g., Ramot at Tel Aviv Univ. Ltd. v. Cisco Sys., Inc.*, 2020 WL 2517581, at *16 (E.D. Tex. May 15, 2020) (patent owner’s statements to the PTAB regarding disputed term constituted a disclaimer and “intrinsic evidence”). The rationale for this rule is straightforward—it is a fundamental principle of patent

⁷ Align’s IPR statements accurately summarize the prosecution history: the Examiner did allow Align’s claims on the basis that the second scan data must be obtained after “the intra-oral cavity (e.g., dentition) is modified in between the scans.” Ex. P [’936 File History, Notice of Allowance mailed April 8, 2020] at ALGN00005589-ALGN00005590. Claim 17 of the ’936 patent appears to have been allowed without including the “physically changed portion” language because of an oversight by the Examiner as he was considering both the ’936 patent and its parent patent (U.S. Patent No. 10,791,934). During the parent ’934 patent prosecution, claims that did not require the second scan data to relate to a “physically changed portion” were rejected as obvious over the prior art. Ex. Q [’934 File History, Rejection mailed July 26, 2019] at CC_ALGN_00016973-CC_ALGN_00017019. After that rejection, Align filed the continuation application for the ’936 patent. *See* ’936 patent, Cover Page. While that application was pending, Align reached an agreement with the Examiner in the ’934 prosecution that adding the “physically changed” limitation would overcome the prior art, and Align filed a corresponding amendment to the ’934 claims. Ex. R [’934 File History, October 24, 2019 Interview Summary] at CC_ALGN_00017357-CC_ALGN_00017358; Ex. S [’934 File History, October 28, 2019 Align Amendment] at CC_ALGN_00017115-CC_ALGN_00017126. The Examiner then issued Notices of Allowance for the ’934 and ’936 patents, with nearly identical Statements of Reasons for Allowance, but without noticing that claim 17 of the ’936 patent omitted the “physically changed portion” limitation. Ex. T [’934 File History, Notice of Allowance mailed Feb. 14, 2020] at CC_ALGN_00017241-CC_ALGN_00017242; Ex. P [’936 File History, Notice of Allowance mailed April 8, 2020] at ALGN00005589-ALGN00005590.

law that patent owners cannot argue claims one way to preserve validity and another way to try to show infringement. *See Aylus*, 856 F.3d at 1359-61 (courts should ensure that “claims are not argued one way in order to maintain their patentability and in a different way against accused infringers”). On this basis alone, the Court should adopt ClearCorrect’s construction of “second scan data of the patient’s teeth,” which precisely tracks Align’s IPR statements. *See David Netzer Consulting Eng’r LLC v. Shell Oil Co.*, 824 F.3d 989, 995-96 (Fed. Cir. 2016) (“patentee clearly disclaimed conventional extraction,” including by “twice stat[ing] during prosecution” that claimed invention produces a product that “need not” have the same characteristics as products produced through conventional method); *Grecia Estate Holdings LLC v. META Platforms, Inc.*, 605 F. Supp. 3d 905, 915 (W.D. Tex. 2022) (Albright, J.) (finding disclaimer based on patentee’s IPR statements).

In short, Align’s statements in the IPR proceeding, in the specification, and in the file history of both the ’936 patent and its parent are all consistent with ClearCorrect’s proposed construction, and the Court should thus construe “second scan data of the patient’s teeth” to mean “new scan data of the patient’s teeth after the patient’s intraoral cavity itself has physically changed.”

IV. CONCLUSION

For the foregoing reasons, ClearCorrect’s constructions should be adopted.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of this document has been served on all counsel of record via electronic mail on October 31, 2024.

/s/ Melissa R. Smith

Melissa R. Smith

Appendix A

As noted in footnote 1, to preserve its indefiniteness positions, ClearCorrect identifies the following additional terms that it asserts are indefinite.

- a) *“means for receiving an electronic representation of a desired final position for each respective dental object” (Claim 15 and dependents)*

ClearCorrect’s indefiniteness arguments raised in Section II.D.2.a) regarding the term “means for receiving an electronic representation of each dental object of the plurality of dental objects in relation to one another” also apply to this term. *See* Xiong Decl. ¶¶ 46-50.

- b) *“means for determining the distance each respective dental object will move to achieve its respective final position” [claim 16]; “means for dividing the total distance for each dental object by its respective maximum speed to determine a number of movement stages for each dental object” [claim 20]; “means for determining a number of non-movement stages for each respective dental object” [claim 20]; “means for adding the number of movement stages to the number of non-movement stages for each dental object to determine a minimum number of stages for each respective dental object” [claim 20]; and “means for selecting the largest of the minimum number of stages” [claim 20]*

ClearCorrect’s indefiniteness arguments raised in Section II.D.2.d) regarding the terms “means for determining a rate at which each respective dental object will move along its respective route” and “means for determining a total distance each respective dental object will move” also apply to these terms. *See, e.g.*, Xiong Decl. ¶¶ 79-84, 129-135, 136-142, 143-149, 150-156.

- c) *“means for ordering the movement of the dental objects in an all-equal pattern” [claim 21]; “means for ordering the movement of the dental objects in an A-shaped pattern” [claim 23]; “means for ordering the movement of the dental objects to form an M-shaped pattern” [claim 24]; “means for ordering the movement of the dental objects in a mid-line shift pattern” [claim 25]; “means for staggering the movement of at least two dental objects” [claim 26]; and “means for slowing the movement of at least one dental object” [claim 28]*

ClearCorrect’s indefiniteness arguments raised in Section II.D.2.g) regarding the terms “means for ordering the movement of the dental objects in a V-shaped pattern” and “means for round tripping at least one dental object” also apply to these terms. *See* Xiong Decl. ¶¶ 157-167, 179-189, 190-200, 201-211, 212-216, 222-226.